4. the province of oceanic climate (southern coast of Crimea and that part of Sub-Caucasia that lies along the sea coast) has warm, rainy winters and hot, dry summers. 132

c) Rivers and Seas

The rivers of Ukraine are long and carry much water. They either flow to the Baltic (Syan, Veper, Buh and Narew and other tributaries of the Vistula), or to the Black Sea and the Sea of Oziv (Danube with tributaries, Dnister, Buh, Dnipro, Don with Donets etc.). The fact that the main watershed runs through the plains faciliates the construction of a network of canals connecting the seas. The Dnipro (1405 miles long and draining an area of 199 230 sq. miles) is the largest river in Ukraine. Historical settlements lie on its banks and the Ukrainian state developed along its course. For the people of Ukraine it is a sacred river. 133 487

The Buh (497 miles long, draining an area of 24 450 sq. miles) flows into the Black Sea west of the Dnipro. It has not much water and is not navigable.

South-west Ukraine is drained by the Dnister (856 miles long, area of basin 29615 sq. m.). Its course is not regulated either and it is not navigable. The rivers Prut and Cheremosh connect Ukraine with the Danube, while the Don and the Donets form the channel to the Sea of Oziv; the Kuban river drains the Kuban plain.

The Black Sea (area 158 462 sq. miles) connected by the Kerch Strait with the Sea of Oziv (area 14 615 sq. miles) has always been the channel of commerce between the eastern world and the countries round the Mediterranean. Its most important harbors, Odessa, Sevastopil, and Novorossijske are blocked by ice for a short time only; the Sea of Oziv, on the other hand, is too shallow to be navigable.

d) Flora and Fauna

The commonest tree in the northern forest zone is the pine; the birch, the alder, the ash and other species also occur frequently. In the west we find beech and larch, and in the Carpathians the spruce and the fir, and sometimes even the cedar. 137

101 The area of Ukrainian economy corresponds to the expansion of the people, i. e. with the compact Ukrainian territory as settled (930 000 sq. km). Yet the frontiers do not quite coincide and the geographical principle cannot be brought into line with the ethnographical. Colonising efforts that even reached the shore of the Pacific must be left out of account, in spite of the Ukrainian population they represent, as must also large enclaves of foreign nations within Ukraine.

On the other hand we must bear those Ukrainian areas in mind where the Ukrainian population, though not yet in the majority, is still increasing (parts of North Caucasia and the Crimea).

● 487 **2. Ukraine's position in the European system of communications** is fairly central; it is not further from the mouth of the Dnipro to Egypt or Mesopotamia than it is to England, Southwest Germany or Moscow. Ukraine connects the Baltic states with the coasts of the Black Sea, Central Europe with Asia, the lower reaches of the Danube with Russia. Thirty percent (about 2 000 out of 6 000 km) of the route from Berlin or London to the Caspian Sea and thence to India and Western China lies in Ukrainian territory. In Asia Minor, which is near Ukraine, indeed partly connected with it by water, we find the junctions of important long-distance routes (Berlin-Bagdad; Marseilles-Suez-Indochina or Madagascar etc.).

There are no great natural obstacles to communications; even the ridge of the Carpathians is traversed by eight easy passes. From the point of view of communications, the lack of natural frontiers is a great advantage. The watersheds between the rivers flowing to the Black Sea and those to the Baltic Sea are so narrow, low and flat that it is easy to build short canals across them.

3. The geographical situation of Ukraine as a trade center which is not only a result of its position in the system of European communications, was particularly favorable in the Middle Ages. It was largely determined by the priority of overland and river communications over sea trade routes. In Kyiv the trade route to Byzantium intersected the overland route to

the Don which continued to Ityl, the Khazar capital at the mouth of the Volga where two important routes terminated, viz. a caravan road from Bagdad via Khovaresm in the Turkestan of to-day and a road from China via the basin of the Tarim. Communicating routes led via the Pripyat to the Memel and Vistula areas, and via Halych to Hungary or via Cracow to Prague and Regensburg. 487

But Ukraine forfeited these advantages when Bagdad, Byzantium and Kyiv declined and when the Crusades shifted the main trade routes to the Mediterranean and later when America was discovered and the sea route to India became known. In addition, there were changes in the needs of civilisation; instead of furs, wax and honey, there was now a demand for goods in bulk like grain and timber which had to be transported all too expensively to the West via the Baltic as the Turks blocked the exit to the Mediterranean. The early golden age of Ukraine was the result of favorable trade conditions and it sank when these changed.

4. Black Earth and Granary

The enormous area of 70 million ha black earth produced considerable surplus grain crops. Ukraine became the granary of Europe, but as the structure of the country was wholly agrarian, industry was slow to develop so that towns and industry were flooded by aliens. 433

Grain was exported in ancient times to Greece and Rome. Grain and cattle were transported from the central Dnipro area to the harbors and markets of Germany. But export trade only began to flourish in earnest when the fertile steppe and the sea coast were re-conquered. Food requirements of European industrial states were supplied from harbors on the Black Sea and the Sea of O[illegible]v; and yet this improvement in geographical trade condition was no longer the decisive feature in Ukrainian economy. 439

Ukraine was responsible for 10 % of the world's production of the four European kinds of grain and was therefore among the leading sources. From 1909—1913 its grain exports accounted to 8.6 million roubles, and to more than a fifth of the entire

from Ukraine, although it is true that Russia had to be supplied with sugar in addition to raw and auxiliary materials (coal, ores, pig-iron, steel etc.). Imports to Ukraine (e. g. textiles) were more than met by exports. But no capital was imported from Russia to set off the active trade balance; this came almost entirely from other countries.

In the common budget of Imperial Russia in the years 1909—1913 Ukraine had to supply 20 % of the total revenue while it was allocated only 20 % of the expenditure. Almost half (45—46 %) of the Imperial revenue from Dnipro Ukraine was diverted to other areas of Russia. Three fourths of the funds ear-marked for capitalisation went abroad in the form of interest and dividends; Russia itself utilised revenue from Ukraine to install rival plants that very often manufactured or finished goods derived from Ukraine. Ukraine exported abroad four to nine times as much as she imported and was solely responsible for the fact that Russia had an active trade balance. It is an undisputable fact that Ukraine was an integral part of the economic system of Europe before the First World War.

7. The Russian Eurasian Theory

is that all Eurasian and Asiatic parts of Russia, including peripheral areas like Mongolia, Eastern Turkestan etc. must be united in one great empire. Let us view this problem from the point of view of economic geography.

The features common to that gigantic stretch of territory are the enormous distances between the various centers of production to the frontiers and the sea, the length of time that rivers and seas are ice-bound, sparse population, high costs of transportation, and an unfavorable position with regard to world markets. It must therefore be organised as a self-supporting economy, planned from some center. Western Siberia is the heart of Eurasia.

These facts do not apply to Ukraine. The 2400 km between the sea and the Semyrjechka area may be Eurasian, while in Europe the least favorable points are less than 600 km from the sea, and this "European" distance from the sea holds for Ukraine where no center is further than 600 km from the Black Sea. The distance between the Kusnets Basin, the chief coal area of

131 Eurasia and the ores in the Ural is more than 2000 km; the
● 487 coal of the Donets Basin, on the other hand, is about 350—450 km from the iron ore of Kryvyj Rih, while the iron and manganese ores of Kerch are nearer still. The seas in the north of Russia are frozen for 20—26 weeks, while the Black Sea has ice for but 3—4 weeks in the year. Most of its harbors can be kept open all winter by means of ice-breakers. The
[161] density of the population in Ukraine is 59 to the square kilometer which cannot be compared with the figures for Siberia (1 per sq. km) or with the average for USSR (8). Conditions in Ukraine, therefore, are much more akin to those in Europe than are those in the continental heart of Eurasia some 4000 km away. And for Ukraine this fact found expression, for instance, in the fact that it could not profit from the reduced railway freights that were granted for long-distance transportation. The unfavorable position of Moscow and Leningrad as manufacturing centers was a great handicap to the economy of Ukraine which possessed all the conditions necessary for production within its own frontiers but nevertheless had to import goods from there and export raw materials to very low prices.

As long as Russia's face was turned towards Europe, these considerations did not matter much, but they are felt all the more acutely now that the economy of the Soviet Union is definitely planned.

8. The Ukrainian idea of economy

421 with its championship of private property was always entirely different from the "mir" idea, with its farming in common and periodical division of the soil which was characteristic for Russian economy. Exceptions within Ukrainian territory, due to special conditions of time and place, do not alter this fundamental fact.
[566] That serfdom should have been abolished so late was felt to be a great burden by the Ukrainian who had enjoyed personal freedom in his days of political independence. He always connected serfdom with Russian rule which naturally did not help to mitigate his aversion to everything Russian.

433 In national Ukrainian literature, the relationship of different branches of economy is often discussed. It is often maintained that up to the present, development has been along the lines of

roads were superior in quality to those in Galicia and the network was denser. The total length of highways in Ukraine was approximately 24 000 km. There was little motor traffic: there was more in Carpatho-Ukraine but in 1937 there were in Ukraine only 13 cars per 10 000 inhabitants (in France 492, England 431, Germany 183).

4. Inland Waterways

As regards length and the area of their basins, the rivers of Ukraine are among the largest in Europe, but their navigability suffers from frequent windings, shallows and rapids. In summer variations in the water level are a great disadvantage, while in winter the rivers are frozen for 3—4 months. As the rivers melt from the mouth, there is no danger from ice-floes. 90 % of the rivers flow into the Black Sea, some into the Vistula and two insignificant streams into the Caspian Sea. The Dnipro and some of its tributaries are navigable as are also 4 other rivers:

The Dnipro is 2248 km long and drains an area of 518 500 square kilometers, so that it is the third biggest river in Europe. By the dam it has been made navigable for 1250 kilometers. Its tributaries, the Pripyat, the Desna and the Seym are also navigable. The total length of the Dnipro navigable network is 3250 kilometers, while 4300 km of waterways can be used for shipping and floating rafts, i. e. more than $^2/_3$ of the total waterways in Ukraine (6200 km).

Freight traffic on the Dnipro did not reach the pre-war level of 2.7 million t till 1932 and had increased by 1935 to 3.9 million t. Passenger traffic doubled in those years and amounted to 4.8 millions. $^1/_3$ of the goods transported was wood, and $^1/_4$ mineral building materials, more than $^1/_8$ grain, while coal, ore and metal were poorly represented. The important harbor towns on the Dnipro are Kyiv, Dnipropetrivske, Nishnodniprovske and Kherson.

The Dnister (1372 km long, draining an area of 77 000 sq. km) has been prevented by geological and political conditions from developing any great shipping. Upper reaches and lower belong to two absolutely different political systems. Before the

505 First World War grain, wood, gypsum and building stone (250 000 t) were transported on the river, while later only wood was shipped on the upper reaches.

133 The Kuban (800 km long, with a basin of about 60 000 sq.km) 487 has its source in Caucasian glaciers and is navigable all the year round for a stretch of 350 km. It is true that gravel and 505 sandbanks make shipping difficult. In 1935 230 000 t of freight were shipped down the river. The Boh (709 km long, with a basin of 64 000 sq.km) has little water and many rapids. 100 km are navigable, but traffic is negligible. Of the Don (1984 km long, with a basin of 425 000 sq.km) which is the fourth biggest river in Europe, only the navigable lower reaches belong to Ukraine. Goods transported are above all grain, coal, salt- 254 000 t in 1935. Conveyance of passengers is negligible.

Its right tributary, the Donets (1 020 km, with a basin of 99 000 km) crosses the Donets Basin and is navigable for a stretch of 350 km. The Buh, Vepr and Syan, Prut, Seret and Tysa are only important for floating down logs.

503 The condition of the Ukrainian waterways is not imposing, though Ukraine comes fourth in Europe with its 6 200 km of navigable rivers. There is no thorough system of regulating the rivers or building canals to connect them, though this has been planned for decades. There are only 200 km of canals. The following artificial systems of communication by water have been planned:

a) reconstruction of the Viking way and the linking up of Leningrad, Kyiv and Kherson (2 canals each 30 km long);

b) a connection between Riga and Kherson, in place of the antiquated route via the Beresina which has existed since 1805;

c) development of the now inadequate route (Oginski-Canal etc. 343 km) between the Dnipro or the Pripyat, Pina and Jasiolda and — via the Shara — the Memel linking Kherson with Kõnigsberg;

d) (Royal canal etc. 233 km) between the Pina and — via the Mukhovets — the Buh and the Vistula, connecting Kherson with Danzig;

7:Bregy & Obolensky H-4, 5 (no date) 1940 RD1 Ukraine RD1

will occupy us particularly in order that we should be able to disentangle the historical factors which oppose her union with Russia, as well as those which tend to maintain this unity.

But before coming to this, let us try to consider one more geographical circumstance which underlines the unity of the Ukraine and Russia. This is the system of rivers. Here, too, the principles which apply to the Ukraine also apply to the whole of Russia. The whole plain is a region of great rivers, which flow from south to north, or from north to south. It is in the latter direction that the rivers of the Ukraine flow. Their waters are emptied into the Black Sea. Chief among them is the Dnieper, which, owing to its length of 2500 kilometres, occupies third place in Europe, after the Volga and the Danube. It crosses Ukrainian territory from north to south, dividing it into two almost equal parts, while its sources lie in the north, in Great Russia, beyond Ukrainian territory. Thus it forms a natural link between the north and the border regions of the Black Sea. And it is to this great mercantile route, represented by this river, that the Ukrainian territory owes in great measure the role it has played in Europe since the tenth century of our era.

The river, too, was a great route of colonization. The first agriculturalists followed the routes which nature herself had provided in the Ukraine as well as in the whole Russian Plain.

As we have seen, it is impossible, geographically speaking, to fix the frontiers of the Ukraine. But we have also said, that to determine the subject and to reach the aim of this book, we have to establish approximately the territory which we will call by this name. Having also accepted the Carpathians as the only geographical frontier, we shall keep to this with regard to the whole

9: Prothero G-4 (no date) 1920 RD1 Ukraine RD1

River System

The Ukraine as a whole consists of portions of the basins of the Rivers Dnieper (with its tributary the Pripet), Dniester, Bug, and Donets, the last named being the largest affluent of the Don. 133

The *Dnieper*, which rises in the Government of Smolensk, has a total length of about 1,410 miles, and drains an area of 202,140 square miles. It first touches Ukrainian territory at Loyev on the western border of Chernigov, and thence flows in a south-easterly direction to Yekaterinoslav, in a shifting channel which varies greatly in depth and breadth. At Yekaterinoslav the river turns south and then south-west, forming a succession of rapids, so that navigation in this part is only possible when the river is in flood. Artificial canals enable small vessels to proceed when there is low water in the channel. The Dnieper enters the Black Sea below the town of Kherson, by a *liman*, into which the Bug also discharges. 133 487 [502]

The chief tributaries of the Dnieper are: on the right bank, going from north to south, the Berezina, which runs through the Government of Minsk; the Pripet, with its many affluents, among them being the Styr and the Strumen, all of which overflow their banks and help to form the system of marshes which is more fully described in *Russian Poland*, No. 44 of this series (p. 15), and the Ingulets, which flows a little above Kherson into the Dnieper near its outlet to the Black Sea. 133

On the left bank the chief tributaries are the Sosh; the Desna, which flows through Chernigov into the Dnieper just above Kiev; and the Samara, which joins the river at Yekaterinoslav.

There is a regular service of passenger steamers on the Dnieper both above and below the rapids, and also along the Pripet as far as Pinsk. [505]

The *Dniester* rises in Austrian Galicia, and only the last 515 miles of its course, with a drainage area of 16,500 square miles, belong to Russian territory. It reaches the Ukraine provinces near Kamenets Podolsk,

9: Prothero G-4 (no date) 1920 RD1 Ukraine RD1

in the Government of Yekaterinoslav in the Donets coal and iron region. 491

The second-class roads, described as 'paved throughout', have a mileage of 953. They are under the care of the *zemstvos*, but the expenditure bestowed upon them is small.

The third class of roads, described as 'soil' roads, has by far the greatest mileage, their length being 54,148 miles. In no country of western Europe would they be classed as roads, being merely tracks from point to point, worn by the traffic of the district. They are under the care of the *mirs*, or communes, whose budgets admit of the expenditure of very small sums on their upkeep.

As other means of communication are also few and unsatisfactory, the lack of good roads would be a fatal drawback to any development of the country, were it not for the fact that during three or four months of the year traffic by sledge is almost everywhere possible without special regard to the existence of a road or even a track. As during this period agricultural operations are suspended, an opportunity is afforded of transporting a vast quantity of goods. 471 489

(*b*) *Rivers and Canals*

The rivers of the Ukraine include the middle and lower courses of two large rivers, the Dnieper and the Dniester. Both are navigable for long distances, and should be of great importance as means of communication. Each, however, suffers from a serious natural defect which much curtails its usefulness, and to remedy which no adequate measures have been taken. 487 [133]

For purposes of navigation the river *Dnieper* falls into two sections known as 'above the rapids' and 'below the rapids'. Between Yekaterinoslav and Alexandrovsk are ten rapids, which are very dangerous and completely prevent navigation. Timber rafts are floated down, but the occupation of steering them is considered most hazardous and is entrusted to local pilots specially trained. Some attempt at improving

9: Prothero G-4 (no date) 1920 RD1 Ukraine RD1

487 the channel was made early in the nineteenth century, but proved abortive. Proposals to canalize this section 487 have so far had no result. From Loev to Yekaterinoslav, above the rapids, there is passenger traffic, 505 some goods traffic, and a vast traffic in rafted timber. Though some of the timber is floated down the rapids to Kherson, most is brought ashore at Yekaterinoslav, which receives annually some 160,000 tons of building timber, besides other classes of wood. Below the rapids the river is navigable from Alexandrovsk to the mouth.

487 Some of the tributaries of the Dnieper are navigable for some distance from their junction with the main stream—the Pripet (Pripyat) for a short stretch; the Desna, which joins the Dnieper at Kiev, as far as the boundary of the Ukraine near Novgorod Sjeversk; the Psiol to a point west of Poltava; the Ingulets for about 25 miles.

501 The vessels employed in the Dnieper basin are of 487 small tonnage (maximum about 300 tons), and the steamers are almost all either for passenger traffic or for towing the barges in which goods traffic is mainly carried. The maximum loaded depth below the rapids is 12 ft. 10 in.; above the rapids it is considerably less.

The *Dniester* is navigable for the whole of its length in the Ukraine from the Galician frontier to the mouth at Akkerman. There are many dangerous rapids, and the vessels used on the river are small, with a maximum draught of 3 ft. 9 in. The lagoon at the river mouth is so shallow that most vessels discharge at Varnitsa near Bender for carriage by rail to Odessa.

The *Southern Bug* is navigable from Vosnesensk to the mouth at Nikolaev. There is passenger traffic, and the size and draught of vessels is the same as on the Dnieper, below the rapids.

There is some navigation on the river *Styr* in Volhynia from Lutsk to Borobaza, also on the *Western Bug* from the Galician frontier to the point where it leaves the Ukraine, but in both cases only for rafts and vessels of very light draught.

9: Prothero G-4 (no date) 1920 RD1 Ukraine RD1

The navigable length of the principal rivers is as follows: 487

	For Shipping. Miles.	*For Rafting only.* Miles.
Dnieper	1,250	136
Desna	537	166
Dniester	521	35

All the above-mentioned waterways suffer in common from four serious defects. (1) They are frozen for a considerable period of the year. In the basin of the Dnieper traffic was only possible in the first ten years of this century for an average of 230 days above the rapids and 250 below. Other rivers are in a similar case. (2) The volume of water falls rapidly in summer, and in dry seasons lack of water impedes navigation seriously. (3) Wholesale cutting down of the forests on the banks has led to alteration of the beds of the rivers and the splitting up of the channels. (4) Works for the improvement of navigation scarcely exist, not even the most urgent having been undertaken. 487 502

The principal cargoes carried are breadstuffs, wood, and coal. Cereals are embarked in great quantities on the lower Dnieper and Southern Bug for shipment abroad from Kherson and Nikolaev. The upper Dnieper and the Dniester carry timber. 505 439

Navigable canals do not exist in the Ukraine. Should the scheme for a Dvina-Dnieper canal materialize, it would have a noticeable commercial effect upon the towns of Kiev, Yekaterinoslav, Alexandrovsk, and Kherson. 503

(c) *Railways*

Railway System.—There are in the Ukraine three great railway centres, viz. Kiev, Kharkov, and Yekaterinoslav. 496

1. From Kiev a line runs in a westerly direction to Sarny and Kovel, continuing thence to Chofm and Warsaw.

A second line goes in a north-easterly direction to Bakhmach, thence *via* Kursk and Orel to Moscow.

TABLE XXI

U 397

Ukraine: Pre-War Production of Long Distance Locomotives

Year	Ukrainian S.S.R number	Soviet Union total number
1928	231	479
1932	431	828
1937	880	1,214

Sources: Socialist Construction, Moscow, 1939; and Russia's Economic Front, A. Yugov, New York, 1941.

SU [397] Ukrainian production of long-distance locomotives in 1950 is planned to be 1,000. For the Soviet Union as a whole a target of 2,720 has been fixed: this includes 2,200 steam locomotives, 300 diesel, and 220 electric locomotives. The Ukrainian output of freight cars in 1950 is fixed at 55,500 - more than a third of the target for the whole U.S.S.R., which is 146,000 freight cars.

Motor Vehicles

U 397 SU [397] The number of motor vehicles to be produced in 1950 in the Ukrainian S.S.R. is fixed by the new Five-Year Plan at 25,000 while for the entire Soviet Union the output is as follows: 428,000 trucks, 65,600 passenger cars, and 6,400 motor buses. Apparently the destruction of factories producing motor-vehicles was particularly heavy.

The Five-Year Plan provides for the building in the Ukraine of two motor car assembly plants, as well as a works to produce annually 60,000 motor trucks.

Dnieper-Bug Canal[1]

U 503 487 The Dnieper-Bug Canal, cutting through the Pinsk bogs and the Brest forest in Byelorussia, is important as the only water outlet towards the west, connecting the Dnieper, Western Bug, and the Black Sea with the Vistula.

It first took shape at the end of the 18th century under the name of the Imperial Canal. But in those days, being shallow and without sluices, it was of little use for navigation. For ten months in the year the canal was dead. Only at high water, in the springtime, could a small quantity of timber be rafted along its course.

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1 Soviet News July 24, 1946.

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The canal was reconstructed just before the German invasion. In record time, eight months, ten large sluices were built in two stairways of five locks each; and in August 1940 the first river vessels passed through from the Black Sea to the Vistula.

The Germans destroyed these sluices and choked the canal so that all the hydro-technical structures had to be rebuilt anew. The speed of reconstruction was such that by the middle of 1946 vessels and barges were passing freely from the Vistula along the Dnieper with cargoes of timber for the Ukraine.

At present the western Bug is navigable only in April and May. When it has been converted into a normal waterway, effective communication will be established between the Ukrainian and Byelorussian river basins and the Vistula, Oder, Elbe, and Rhine.